

CLAIMS

1. A hydrogen combustion device comprising:
 - a casing defining a passage for airflow therein;
 - 5 a hydrogen source arranged outside the casing;
 - a hydrogen pipe arranged so as to extend from the hydrogen source into the passage for airflow thereby to supply hydrogen gas from the hydrogen source into the airflow flowing in the casing, the hydrogen pipe having a hydrogen pipe body and a hydrogen ejecting part arranged at the leading end of the hydrogen pipe body and also provided with a plurality of hydrogen ejecting orifices;
 - 10 a mixer arranged close to the hydrogen pipe, for stirring the mixed gas; and
 - a combustion catalyst arranged on the downstream side of the mixer in the flowing direction of the airflow to cause an oxidative reaction of the mixed gas thereby generating heat, wherein
 - 15 the hydrogen ejecting part is positioned at a substantial center in the cross section of the passage defined in the casing and also arranged so as to extend along the flowing direction of the airflow, and
 - 20 the hydrogen ejecting orifices are arranged so that their axes extend in the radial direction of the hydrogen ejecting part, substantially perpendicularly to the flowing direction of the airflow.
2. The hydrogen combustion device of claim 1, wherein
 - 25 the hydrogen ejecting part is arranged so as to face the upstream side of the airflow and is provided with a tapered leading end.

3. The hydrogen combustion device of claim 1, wherein
the hydrogen ejecting part is formed to have the same diameter as
that of the hydrogen pipe body and the hydrogen ejecting part is welded to
5 the hydrogen pipe body perpendicularly.

4. The front body structure of claim 1, wherein
the hydrogen pipe is arranged in a manner that the hydrogen ejecting
part takes its position on the upstream side of the mixer in the flowing
10 direction of the airflow, while the hydrogen pipe body takes its position
inside the mixer.

5. The front body structure of claim 1, wherein the hydrogen ejecting
orifices have different diameters.

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6. The front body structure of claim 5, wherein the hydrogen ejecting
orifice on the upstream side in the flowing direction of hydrogen gas
flowing in a straight part of the hydrogen pipe body is formed to have a
small diameter in comparison with the diameter of the hydrogen ejecting
20 orifice on the downstream side in the flowing direction of hydrogen gas
flowing in the straight part of the hydrogen pipe body.

7. The front body structure of claim 5, wherein the hydrogen pipe body
includes a curved portion, the hydrogen ejecting orifice on an outer
25 circumferential side of the curved portion is formed to have a small diameter
in comparison with the diameter of the hydrogen ejecting orifice on an inner

circumferential side of the curved portion of the hydrogen pipe body.